

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A continuously variable transmission (1) for motor vehicles, comprising:

a drive belt (10) comprising substantially axially oriented running surfaces (16) arranged on either side of the drive belt (10);

a primary pulley (2) comprised of two conical pulley disks (21, 22), each pulley disk of the primary pulley including a contact surface contacting the side of the drive belt; and

a secondary pulley (3) comprised of two conical pulley disks (31, 32), each pulley disk of the primary pulley including a contact surface contacting the side of the drive belt, wherein,

the drive belt (10) is wound around the primary pulley and the second pulley contacting the respective contact surfaces of the pulley disks of the primary and second pulleys, at least when the transmission (1) is operating, the drive belt is clamped, via the substantially [[the]] axially oriented running surfaces (16) i) between the two conical pulley disks (21, 22) of the primary pulley (2) with a primary clamping force ( $K_p$ ) and ii) between the two conical pulley disks (31, 32) of the

secondary pulley (3) with a secondary clamping force ( $K_s$ ) to transmit a supplied torque ( $T_p$ ) with the aid of frictional forces from the primary pulley (2) to the secondary pulley (3),

a curvature of the contact surface (40) of at least one (43) of the pulley disks (21, 22, 31, 32), in an unloaded state, is convexedly curved facing the drive belt (10) as seen in a cross section of said one pulley disk,

the curvature, oriented perpendicular to a tangential direction, in said cross section, defines a contact angle ( $\lambda$ ) between a tangent line (41) on the contact surface (40) of the one pulley disk (43) and a radial direction (42),

the contact angle ( $\lambda$ ) varies in relation to a radial position ( $R_p$ ,  $R_s$ ) of a contact point between the respective running surface (16) of the drive belt (10) and the contact surface (40), the contact angle ( $\lambda$ ) being at a lowest value at the a location of a radially innermost position on the contact surface (40) and the contact angle ( $\lambda$ ) being at a highest value at a location of a radially outermost position on the contact surface (40),

a transmission ratio ( $R_s/R_p$ ) of the transmission (1) is defined as the quotient between the radial position ( $R_s$ ) for the secondary pulley (3) and the radial position ( $R_p$ ) for the primary pulley (2), and

the contact angle ( $\lambda$ ) being adapted in relation to said

radial position ( $R_p$ ,  $R_s$ ) provides that at least in the largest transmission ratio ( $R_s/R_p$ ) and at least when the largest transmission ratio ( $R_s/R_p$ ) is constant, a clamping force ratio ( $K_p K_s$ ) between the primary clamping force ( $K_p$ ) and the secondary clamping force ( $K_s$ ) has a value in the range between 1 and the clamping force ratio ( $K_p K_s$ ) in the smallest transmission ratio ( $R_s/R_p$ ).

2. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein the contact angle ( $\lambda$ ) in relation to said radial position ( $R_p$ ,  $R_s$ ) provides that, in the smallest transmission ratio and at least when the smallest transmission ratio is constant, the clamping force ratio ( $K_p K_s$ ) has a value in the range between 1.8 and the clamping force ratio ( $K_p K_s$ ) in the largest transmission ratio ( $R_s/R_p$ ).

3. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein the contact angle ( $\lambda$ ) being adapted in relation to said radial position ( $R_p$ ,  $R_s$ ) provides that in all transmission ratios ( $R_s/R_p$ ) of the transmission (1), the clamping force ratio ( $K_p K_s$ ) has a value in the range between 1.2 and 1.6.

4. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein a safety factor ( $S_f$ ) between a minimum primary or secondary clamping force ( $K_p$ ;  $K_s$ ) required for the transmission of the torque ( $T_p$ ) supplied in the respective transmission ratio ( $R_s/R_p$ ) and a desired primary or secondary clamping force ( $K_{pDV}$ ;  $K_{sDV}$ ) is approximately 1.3.

5. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein, at least for the constant transmission ratio ( $R_s/R_p$ ), a desired secondary clamping force ( $K_{sDV}$ ) is determined by multiplying a minimum secondary clamping force ( $K_s$ ) required for the transmission of the supplied torque ( $T_p$ ) by a safety factor of greater than 1, and a desired primary clamping force ( $K_{pDV}$ ) is determined by multiplying said desired secondary clamping force ( $K_{sDV}$ ) by the clamping force ratio ( $K_p/K_s$ ) in said constant transmission ratio ( $R_s/R_p$ ).

6. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein the contact angle ( $\lambda$ ) in relation to said radial position ( $R_p$ ,  $R_s$ ) is at least substantially equal for the two pulley disks (21, 22; 31, 32) of a respective pulley (2, 3).

7. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein a lowest value of the contact angle ( $\lambda$ ) for the pulley disks (21, 22, 31, 32) in relation to said radial position ( $R_p$ ,  $R_s$ ) is at least substantially equal for the pulley disks (21, 22, 31, 32) of the two pulleys (2; 3).

8. (currently amended) The continuously variable transmission (1) as claimed in claim 1, wherein, ~~for all transmission ratios,~~ a highest value for the contact angle ( $\lambda$ ) for the pulley disks in relation to said radial position ( $R_p$ ,  $R_s$ ) is higher for the pulley disks (21, 22) of the primary pulley (2) than the corresponding value for the contact angle ( $\lambda$ ) for the pulley disks (31, 32) of the secondary pulley (3).

9. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein the drive belt (10) is provided with at least one set of rings (12) and a number of transverse elements (11), which can move along the set of rings (12) in the circumferential direction thereof and are provided with the running surfaces (16).

10. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein the contact angle ( $\lambda$ ) in relation to said radial position ( $R_p$ ,  $R_s$ ) corresponds for

the two pulley disks (21, 22; 31, 32) of a respective pulley (2, 3), and, at least in the smallest transmission ratio ( $R_s/R_p$ ) of the transmission (1), a ratio between the contact angle ( $\lambda$ ) for the primary pulley ( $\lambda_p$ ) and the contact angle ( $\lambda$ ) for the secondary pulley ( $\lambda_s$ ) satisfies the condition that:

$$1 < \frac{\tan(\lambda_p)}{\tan(\lambda_s)} \leq 1.6 .$$

11. (previously presented) The continuously variable transmission (1) as claimed in claim 10, wherein, at least in the largest transmission ratio ( $R_s/R_p$ ) of the transmission (1), the ratio between said contact angles ( $\lambda_p, \lambda_s$ ) satisfies the condition that:

$$0.6 < \frac{\tan(\lambda_p)}{\tan(\lambda_s)} \leq 1 .$$

12. (previously presented) The continuously variable transmission (1) as claimed in claim 11, wherein for both the primary pulley (2) and the secondary pulley (3) the lowest value for the contact angle ( $\lambda$ ) is approximately 7 degrees.

13. (currently amended) The continuously variable transmission (1) as claimed in claim 12, wherein for the primary pulley (2) the highest value for the contact angle ( $\lambda$ ) is approximately 10 degrees, and [[in]] for the secondary pulley (3) the highest value for the contact angle ( $\lambda$ ) is approximately 9 degrees.

14. (currently amended) A continuously variable transmission (1) for motor vehicles, comprising:

a primary pulley (2) with two conical pulley disks (21, 22);

a secondary pulley (3) with two conical pulley disks (31, 32),

a drive belt (10) having substantially axially oriented running surfaces (16) arranged on either side of the drive belt (10),

the drive belt arranged around the primary and second pulleys and, at least when the transmission (1) is operating, is clamped, via substantially the axially oriented running surfaces (16), between the two conical pulley disks (21, 22) of the primary pulley (2) with a primary clamping force ( $K_p$ ) and between the two conical pulley disks (31, 32) of the secondary pulley (3) with a secondary clamping force ( $K_s$ ) to transmit a supplied torque ( $T_p$ ) with the aid of frictional forces from the primary pulley (2) to the secondary pulley (3),

wherein, at least when the transmission (1) is operating, a coefficient of friction between the primary pulley

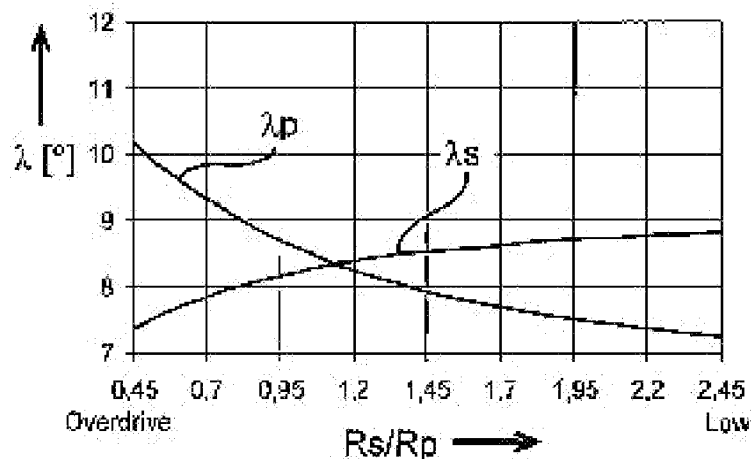
(2) and the drive belt (10) in relation to a radial position (Rp) of a contact point therebetween has a lowest value at [[the]] a location of a radially outermost position of said contact point.

15. (currently amended) The continuously variable transmission (1) as claimed in claim 14, wherein said coefficient of friction between the primary pulley (2) and the drive belt (10) is lower than a coefficient of friction between the secondary pulley (3) [[2]] and the drive belt (10) at [[the]] a location of a radially outermost position of a contact point therebetween.

16. (currently amended) The continuously variable transmission (1) as claimed in claim 14, wherein, at least as seen in a tangential cross section, the primary pulley disks (21, 22), at the location of said radially outermost position of the contact point between the primary pulley (2) and the drive belt (10), are provided with at least one of a relatively large radius of curvature (R40) and a relatively low surface roughness, at least as compared to the radius of curvature (R40) and the surface roughness at [[the]] a location of a radially innermost position of the contact point.



17. (currently amended) The continuously variable transmission (1) as claimed in claim 1, wherein the contact angle ( $\lambda$ ) for the two pulley disks (21, 22; 31, 32) of a respective pulley (2, 3) has a value which corresponds ~~and~~ in that for both the primary pulley ( $\lambda_p$ ) and the secondary pulley ( $\lambda_s$ ) the respective contact angle ( $\lambda$ ) in relation to the transmission ratio ( $R_s/R_p$ ) of the transmission (1) ~~at least substantially~~ corresponds to the contour shown for ~~this~~ each parameter as shown below:



18. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein the clamping force ratio ( $K_p K_s$ ) in relation to the transmission ratio ( $R_s/R_p$ ) of the transmission (1), with the transmission ratio constant has an approximately constant value.

19. (cancelled)

20. (previously presented) The continuously variable transmission (1) as claimed in claim 1, wherein the contact angle ( $\lambda$ ) being adapted in relation to said radial position ( $R_p$ ,  $R_s$ ) provides that in all transmission ratios ( $R_s/R_p$ ) of the transmission (1) and at least when each transmission ratio ( $R_s/R_p$ ) is held constant, the clamping force ratio ( $K_p/K_s$ ) has a value in the range between 1.3 and 1.5.

21. (new) A continuously variable transmission (1) for motor vehicles, comprising:

a drive belt (10) comprising substantially axially oriented running surfaces (16) arranged on either side of the drive belt (10);

a primary pulley (2) comprised of two conical pulley disks (21, 22), each pulley disk of the primary pulley including a contact surface contacting the side of the drive belt; and

a secondary pulley (3) comprised of two conical pulley disks (31, 32), each pulley disk of the primary pulley including a contact surface contacting the side of the drive belt, wherein,

the drive belt (10) is wound around the primary pulley and the second pulley contacting the respective contact surfaces of the pulley disks of the primary and second pulleys, at least when the transmission (1) is operating, the drive belt is

clamped, via the substantially axially oriented running surfaces (16) i) between the two conical pulley disks (21, 22) of the primary pulley (2) with a primary clamping force ( $K_p$ ) and ii) between the two conical pulley disks (31, 32) of the secondary pulley (3) with a secondary clamping force ( $K_s$ ) to transmit a supplied torque ( $T_p$ ) with the aid of frictional forces from the primary pulley (2) to the secondary pulley (3),

a curvature of the contact surface (40) of at least one (43) of the pulley disks (21, 22, 31, 32), in an unloaded state, is convexedly curved facing the drive belt (10) as seen in a cross section of said one pulley disk,

the curvature, oriented perpendicular to a tangential direction, in said cross section, defines a contact angle ( $\lambda$ ) between a tangent line (41) on the contact surface (40) of the one pulley disk (43) and a radial direction (42),

the contact angle ( $\lambda$ ) varies in relation to a radial position ( $R_p$ ,  $R_s$ ) of a contact point between the respective running surface (16) of the drive belt (10) and the contact surface (40), the contact angle ( $\lambda$ ) being at a lowest value at a location of a radially innermost position on the contact surface (40) and the contact angle ( $\lambda$ ) being at a highest value at a location of a radially outermost position on the contact surface (40),

a transmission ratio ( $R_s/R_p$ ) of the transmission (1) is defined as the quotient between the radial position ( $R_s$ ) for the

secondary pulley (3) and the radial position ( $R_p$ ) for the primary pulley (2), and

the contact angle ( $\lambda$ ) being adapted in relation to said radial position ( $R_p$ ,  $R_s$ ) provides that, at least in the largest transmission ratio ( $R_s/R_p$ ) and at least when the largest transmission ratio ( $R_s/R_p$ ) is constant, a clamping force ratio ( $K_p/K_s$ ) between the primary clamping force ( $K_p$ ) and the secondary clamping force ( $K_s$ ) has a value greater than 1,

wherein for both the primary pulley (2) and the secondary pulley (3) the lowest value for the contact angle ( $\lambda$ ) is 7 degrees, and

wherein for the primary pulley (2) the highest value for the contact angle ( $\lambda$ ) is 10 degrees, and for the secondary pulley (3) the highest value for the contact angle ( $\lambda$ ) is 9 degrees.